

SEQUENCE LISTING

```

<110> Hu, Yi
      Turner, C. Alexander Jr.
      Nepomnichy, Boris
      Scoville, John
      Walke, D. Wade

<120> Novel Human Membrane Proteins and Polynucleotides Encoding the Same

<130> LEX-0200-USA

<150> US 60/217,600
<151> 2000-07-11

<160> 8

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 618
<212> DNA
<213> homo sapiens

<400> 1
atgggggctg ctttgtcgc tagcctccgc agtaaccttt cttctgccac ttcaaggtaa      60
gagatgaaca gcagtgttgg ggacctgggt gttggcgctt gcagcctctg ggatgacct      120
gctcgcttca tcgtggtgcc cgcggcctat gccttggcac tgggcctggg gctgccagcc      180
aacgtggcgg ccttggcaat gttcatccgc agcggcgggc gcctgggcca ggccctgctt      240
ctctacctgt tcaacctggc tctggttgat gagttcttca cgtcacgct gcagctgtgg      300
ctcacctact acctgggctt ggcggcgagg cgcctgccca cgcggcgagg gccacctact      360
acgtgtccac ctatgcggcg gtggtcttcg ccgcgtctcat cagcgtgtgc cgtgcgggct      420
tcgtacgcgg tcccggggcc agggcggtct cccgcctggc ccggtgctta cggbgccccg      480
cgcgcgtctg ctgcgccttc gcttggctgg cgggcctggc cctccctctg ctggagcacc      540
gctgggccaag ctgggggctg gcctccgcca cgttggcctt cgcggccgcc ttctgtctgg      600
tgctgcggcg caactgta                                     618

<210> 2
<211> 205
<212> PRT
<213> homo sapiens

<400> 2
Met Gly Ala Ala Phe Val Ala Ser Leu Arg Ser Asn Leu Ser Ser Ala
 1             5             10             15
Thr Ser Arg Ser Glu Met Asn Ser Ser Val Gly Asp Leu Gly Val Gly
 20             25             30
Gly Cys Ser Leu Trp Asp Asp Pro Ala Arg Phe Ile Val Val Pro Ala
 35             40             45
Ala Tyr Ala Leu Ala Leu Gly Leu Gly Leu Pro Ala Asn Val Ala Ala
 50             55             60
Leu Ala Met Phe Ile Arg Ser Gly Gly Arg Leu Gly Gln Ala Leu Leu
 65             70             75             80
Leu Tyr Leu Phe Asn Leu Ala Leu Val Asp Glu Phe Phe Thr Leu Thr
 85             90             95

```

Leu Gln Leu Trp Leu Thr Tyr Tyr Leu Gly Leu Ala Arg Arg Pro Pro
 100 105 110
 Ala Thr Arg Pro Gly Pro Pro Thr Thr Cys Pro Pro Met Arg Arg Trp
 115 120 125
 Ser Ser Pro Arg Ser Ser Ala Cys Ala Ala Ala Ser Tyr Ala Val
 130 135 140
 Pro Gly Pro Gly Arg Leu Pro Ala Trp Pro Gly Ala Tyr Gly Ala Pro
 145 150 155 160
 Arg Ala Leu Pro Ala Pro Ser Pro Gly Trp Arg Ala Trp Pro Leu Pro
 165 170 175
 Ala Trp Ser Thr Ala Gly Gln Ala Arg Gly Trp Pro Pro Pro Arg Trp
 180 185 190
 Pro Ser Arg Pro Pro Ser Cys Trp Cys Ser Arg Pro Thr
 195 200 205

<210> 3
 <211> 2098
 <212> DNA
 <213> homo sapiens

<400> 3
 tggaaagggc tcttctttat atttcagcct gtttctccag aactccctgt tggctcagtc 60
 ctacgtgggt ttactgcaca ggtctgtggc ccaacatgta tgaaccatac tccatctgtg 120
 aggggcatct ctaccctctc agtcaactaa gttggaaatt tccaagtatc ctggagactcc 180
 tgctctcttc tgccttccca cagtttgtca ccaaaaaactc tggagctcat acctctctc 240
 cagcagctgc tggccagggt cggctctcat tccctctcac atggactctg cctctagtgt 300
 cccctccgag caagggctga agaagaggag actgggggtg gagaagggtg aatgggggct 360
 gccctttgcg ctagcctccg cagtaacctt tcttctgcga cttcaaggtc agagatgaac 420
 agcagtggtg gggacctggg tgttggcggc tgcagcctct gggatgaacc tgctgcgttc 480
 atcgtggcgc ccgcggccta tgcttggcca ctgggcctgg ggcctgccag caacgcctgc 540
 gccctggcaa tgttcatcgc cagcggcggg cgcttggggc aggcctgtct tcttaccctg 600
 ttcaacctgg ctctggttga tgagttcttc acgtccacgc tgcagctgtg gctcacctac 660
 tacctggggc tggcccgagg gccgcctgcc acgcggcggg ggccacctac tacgtgtcca 720
 cctatgcggc ggtggtcttc gccgcgtcca tcagcgtgtg ccgctgcggc tctgtacgcg 780
 gtcccgggcc caggcgccgt gccgcctgg ccggtgcct acggcgcccc gcgcgcgctg 840
 cctgcgcctt cgcttggctg gcgggcctgg cccctccctg ctgggagcac cgctgggcaa 900
 gctcgggggt ggctccgcgc acggtggcct tcgcggccgc ctctctgtg gtgctcgcgg 960
 ccaacgtgag cctggcggcg gcgctcaagg cgccctctgg cccgggcccc ggccctgcaa 1020
 cgccgcgcgc gcaccggcgc gcggccaaga ccatggtcct ggggttctgt ctggtcttct 1080
 cctcagctgt gcggcccaac cactcgtcgc tggcgcccta ggtggctggg ggggaagaca 1140
 acggagaccg gtgtgcgcgc gccctccacgc tcgacatcct gcacacccct agcctggcgc 1200
 tgcctgagct caacagctgc ctgggaccac tcactctgct ctcttctgtg cgctcttctc 1260
 accaggagct ctgctgggca ctgagctgcc gccctggtgaa gggggcgccc agggcgcatg 1320
 gggcctctct ggcctctctt tggagagtct cctggcctcc cctctgtct caccccctg 1380
 tcacctctcc agtggcatcc aggtgggaga aagctctttt gaaagacctt gattctaatc 1440
 ctgacgcaac cacatactac cctctgagct gtgaacctcc cagtcacctt cttaggcccc 1500
 ggaataatgc ggtctctctac tcttcatggc ctttgtacct gaattggcca ggaatgatct 1560
 ctgttctctc ctttcaactaa gttagtctt cttacccttc acttctctta aagtaactcc 1620
 ttatagggaa gcccttctgt gctggcaaca cacacacaca cacatacaca cactacatac 1680
 cacgagttaa tcagatcgga ktgctctttg atagctcttt tcataattgt aatcaagcaa 1740
 ttaattgggt aatgcggtgg tgggtgtttc ttctctcttt gccagaatgt attcatgttg 1800
 acccataaga cattatcatt ttataagcc cccaagaatt gaattattga aattttattt 1860
 ccacccaatt caacttaata aattctgtgt ttaccttgcw maaaaaaaaa aaaaaaaaaa 1920
 aaatacatgc tgtatctctc tgggttggca ctgcgccttg catataataa gagctcagtg 1980
 tatcagatgc gtgagtgaac actgaatatc attaatttaa attgcttaag tactcactca 2040
 cacattccaa gtctgtgata gcttttccct caagtgtgtg tgagattctc caagcttg 2098

<210> 4
 <211> 3774
 <212> DNA
 <213> homo sapiens

<400> 4
 atggaataatt cagaagaagc tgaagaaatg caagaaat atcagagaaa tggaaactgca 60
 gaagaacagc caaaactcgag aaaggaagca gttggatcta ttgagatatt ccgcttttgc 120
 gatggactgt acatcaacact catgatccctg ggtatactgg catcactggt caatggagacc 180
 tgccctctctt taatgccactt ggttttagga gaaatgagtg ataaccttat tagtggagtg 240
 ctagtccaaa tcaacacatc aaattatcag aactgtactc agtctcaaga gaagctgaa 300
 gaagatatga ctctgttgcc cctgtattat gttggaatag gttgtgctgc cttgattttt 360
 ggttacatca agatttccct gtggattata actgcagcac gacagaccaa gaggattcga 420
 aaacagtttt ttcattcagt ttggccacag gacatcggtt ggtttgatag ctgtgacatc 480
 ggtgaaactt acactcgcat gacagatgac attgacaaaa tcagtgatgg tattggagat 540
 aagattgtct tgtgttttca aaacatgtct actttttcga ttggcctggc agtgggtttg 600
 gttaaaggctt ggaacctcac cctagtgtact ctatccacgt ctccctttat aatggcttca 660
 gcggcagcat gttctaggat ggtcatctca ttgccacgta aggaataaag tgctattcc 720
 aaagctgggg ctgtggcaga agaagctctg tcatcaatcc gaacagtcac agccttttagg 780
 gccacaggaga aagaacttca aaggatataca cagaacttca aagatgcaa ggaattttggc 840
 ataaaaagga ctatagcttc aaaagtgtct cttgggtgctg tgtacttctt tatgaatgga 900
 acctatggac ttgctttttg gtatggaacc tctctgactt ttaatggaga acctggatat 960
 accatcgagg ctgttcttgc tgttttcttt agtgaatcc atagcagtta ttgcatttgga 1020
 gcagcagtc ctcactttga aaacttcgca atagcccag gagctgcctt tcatattttc 1080
 caggttatgt ataagaaacc cagtatagat aactttttca cagctggata taaacctgaa 1140
 tccatagaag gaactgttga atttaaaaaa gtttctttca attaccatc aagaccatct 1200
 atcaagatgc tgaagaggtc gaatctcaga attaagtctg gagagacagt cgctcttgct 1260
 ggttccaatg ccagttgaaa gagtacggtt gtccagcttc tgcagaggtt atatgatccg 1320
 gatgatggct ttatcatggt ggtatgaaat gacatcagag ctttaaatgt gcggcattat 1380
 cgagaccata ttggagtgtg tagtcaagag cctgttttgt tcgggacac catcacgtaac 1440
 aatatcaagt atggacraga tgaatgtgact gatgaagaga tggagagagc agcaagggaa 1500
 gc aaatgcgt atgattttat catggagttt cctaataaat ttaatacat ttgtagggaa 1560
 aaaggagctc aaatgagtgg agggcagaaa cagaggatcg caattgctcg tgcttagtt 1620
 cgaaacccca agattctgat tttagatgag gctactgtct ccttgatcc agaaagcrag 1680
 tcagctgttc aagctgcact ggagaaggcg agcaaaagtc ggactacaat cgtggttagca 1740
 caccgaactt ctactattcg aagtgcagat ttgatttgta ccttaaggga tggaaatgctg 1800
 gcgggagaaat gagcacatgc tgaactaatg gcaaaaacag gtctatatta ttcacttgtg 1860
 atgtcacagg atattaaaaa agctgatgaa cagatggagt caatgacata ttcactgaa 1920
 agaaagacca acctcacttc tctgcactct gtgaagagca tcaagtcaag ctccattgac 1980
 aagctgtagg aatccacca atctaaagag ataaagtctc ctgaagtctt atatcaaaa 2040
 attttaaagt taacaagcc tgaatggcct ttgtgtgttc tggggacatt ggctctgtt 2100
 ctaaatggaa cgtttcatcc agtattttcc atcacttttg caaaaattac aacctgatt 2160
 ggaataaatg ataaaaccac attaaagcat gatgcagaaa ttatttccat gatattctgc 2220
 attttgggtg ttatttgtct tgtcagttat ttccctcagg gattattttt cggcagagca 2280
 ggggaaattt taccagtag ataaagacac ttggccttca aagccatggt atatcagga 2340
 attgctgtgt ttgatgaaa ggaaaacagc acaggaggct tgacaacaat attagcata 2400
 gatatagcac aaatttcagg aaacacaggt tccaggatg gcgtcttaac acaaaatgca 2460
 actaacatgg gactttcagt tatcatttcc ttatatatg gatgggagat gacattcctg 2520
 attctgtagt ttgctccagt acttgccgtg acaggaaatg ttgaaaccgc agcaatgact 2580
 ggaattgcca acaagaataa gcaagaactt aagcatgctg gaaagatagc aactgaagct 2640
 tgggagaata tacytactat agtgtcatta acaagggaaa aagccttcga gcaaatgtat 2700
 gaagagatgc ttcagactca acacagaaat acctcgaaag aagcacagat tattggaagc 2760
 tgttatctat tcagccatgc ctttatatat ttgtccctat cagcagggtt tcgatttggg 2820
 gccattttaa ttcaagctgg acgaatgacc ccagagggca tgttcatagt tttactgca 2880
 attgcatatg gagctatggc catcggaaaa acgctcgttt tggctcctga atattccaaa 2940
 gccaaatcgg gggctgcgca tctgtttgcc ttgttggaaa agaaacccaa tatagacagc 3000

cgcgagtc	aagggaaaaa	gccagacaca	tgtgaagga	atttagagtt	tgcagaagtc	3060
tctttcttct	atccatgtcg	cccagatggt	tbcctctccc	gtggcctatc	cctcagatatt	3120
gagcgagga	agacagtagc	atttgtgggg	agcagcggtc	gtgggaaaag	cacttctgtt	3180
caacttctgc	agagacttta	tgaccccggtg	caaggacaag	tgctgtttga	tggtgtggat	3240
gcgaaagaat	tgaatgtaca	gtggctccgt	tcccaaatag	caatcgttcc	tcaagagcct	3300
gtgctcttca	actgcagcat	tgctgagAAC	atcgcttatg	gtgacaacag	ccgtgtgtgtg	3360
ccattagatg	agatcaaaag	agccgcaa	atgcgcaata	tccattcttt	tattgaagg	3420
ctccctgaga	aatacaaac	acaagtgtga	ctgaaaggag	cacagcttcc	tgccgcccag	3480
aaacaagac	tagctattgc	aagggtctct	ctccaaaaac	ccaaaatttt	attgktggat	3540
gagggcactt	cagccctcga	taatgacagt	gagaaggtgg	ttcagcatcg	ccttgataaa	3600
gccaggacgg	gaaggacatg	cctagtggtc	actcacaggc	tctctgcaac	tcagaaacga	3660
gatttgatag	tggttctgca	caatggaaag	ataaaggaa	aaggaaactc	tcaagagctc	3720
ctgagaaatc	gagacatata	ttttaagtta	gtgaatgcac	agtcagtgc	gtga	3774

<210> 5

<211> 1257

<212> PRT

<213> homo sapiens

<220>

<221> VARIANT

<222> (1)...(1257)

<223> Xaa = Any Amino Acid

<400> 5

Met	Glu	Asn	Ser	Glu	Arg	Ala	Glu	Glu	Met	Gln	Glu	Asn	Tyr	Gln	Arg
1				5					10					15	
Asn	Gly	Thr	Ala	Glu	Glu	Gln	Pro	Lys	Leu	Arg	Lys	Glu	Ala	Val	Gly
			20					25				30			
Ser	Ile	Glu	Ile	Phe	Arg	Phe	Ala	Asp	Gly	Leu	Asp	Ile	Thr	Leu	Met
			35				40					45			
Ile	Leu	Gly	Ile	Leu	Ala	Ser	Leu	Val	Asn	Gly	Ala	Cys	Leu	Pro	Leu
	50					55					60				
Met	Pro	Leu	Val	Leu	Gly	Glu	Met	Ser	Asp	Asn	Leu	Ile	Ser	Gly	Cys
	65				70				75					80	
Leu	Val	Gln	Thr	Asn	Thr	Ser	Asn	Tyr	Gln	Asn	Cys	Thr	Gln	Ser	Gln
				85				90					95		
Glu	Lys	Leu	Asn	Glu	Asp	Met	Thr	Leu	Leu	Pro	Leu	Tyr	Tyr	Val	Gly
			100				105						110		
Ile	Gly	Val	Ala	Ala	Leu	Ile	Phe	Gly	Tyr	Ile	Gln	Ile	Ser	Leu	Trp
			115				120					125			
Ile	Ile	Thr	Ala	Ala	Arg	Gln	Thr	Lys	Arg	Ile	Arg	Lys	Gln	Phe	Phe
	130				135					140					
His	Ser	Val	Leu	Ala	Gln	Asp	Ile	Gly	Trp	Phe	Asp	Ser	Cys	Asp	Ile
	145				150				155					160	
Gly	Glu	Leu	Asn	Thr	Arg	Met	Thr	Asp	Asp	Ile	Asp	Lys	Ile	Ser	Asp
			165					170					175		
Gly	Ile	Gly	Asp	Lys	Ile	Ala	Leu	Leu	Phe	Gln	Asn	Met	Ser	Thr	Phe
			180				185						190		
Ser	Ile	Gly	Leu	Ala	Val	Gly	Leu	Val	Lys	Gly	Trp	Lys	Leu	Thr	Leu
			195				200					205			
Val	Thr	Leu	Ser	Thr	Ser	Pro	Leu	Ile	Met	Ala	Ser	Ala	Ala	Ala	Cys
	210					215					220				
Ser	Arg	Met	Val	Ile	Ser	Leu	Pro	Ser	Lys	Glu	Leu	Ser	Ala	Tyr	Ser
	225				230				235					240	
Lys	Ala	Gly	Ala	Val	Ala	Glu	Glu	Val	Leu	Ser	Ser	Ile	Arg	Thr	Val

[illegible]

690				695				700							
Val	His	Pro	Val	Phe	Ser	Ile	Ile	Phe	Ala	Lys	Ile	Ile	Thr	Met	Phe
705					710					715				720	
Gly	Asn	Asn	Asp	Lys	Thr	Thr	Leu	Lys	His	Asp	Ala	Glu	Ile	Tyr	Ser
				725					730					735	
Met	Ile	Phe	Val	Ile	Leu	Gly	Val	Ile	Cys	Phe	Val	Ser	Tyr	Phe	Met
			740						745					750	
Gln	Gly	Leu	Phe	Tyr	Gly	Arg	Ala	Gly	Glu	Ile	Leu	Pro	Met	Arg	Leu
		755					760					765			
Arg	His	Leu	Ala	Phe	Lys	Ala	Met	Leu	Tyr	Gln	Asp	Ile	Ala	Trp	Phe
		770				775					780				
Asp	Glu	Lys	Glu	Asn	Ser	Thr	Gly	Gly	Leu	Thr	Thr	Ile	Leu	Ala	Ile
785					790					795					800
Asp	Ile	Ala	Gln	Ile	Gln	Gly	Ala	Thr	Gly	Ser	Arg	Ile	Gly	Val	Leu
				805					810					815	
Thr	Gln	Asn	Ala	Thr	Asn	Met	Gly	Leu	Ser	Val	Ile	Ile	Ser	Phe	Ile
			820						825					830	
Tyr	Gly	Trp	Glu	Met	Thr	Phe	Leu	Ile	Leu	Ser	Ile	Ala	Pro	Val	Leu
			835				840					845			
Ala	Val	Thr	Gly	Met	Ile	Glu	Thr	Ala	Ala	Met	Thr	Gly	Phe	Ala	Asn
			850			855						860			
Lys	Asp	Lys	Gln	Glu	Leu	Lys	His	Ala	Gly	Lys	Ile	Ala	Thr	Glu	Ala
865					870					875					880
Leu	Glu	Asn	Ile	Arg	Thr	Ile	Val	Ser	Leu	Thr	Arg	Glu	Lys	Ala	Phe
				885					890					895	
Glu	Gln	Met	Tyr	Glu	Glu	Met	Leu	Gln	Thr	Gln	His	Arg	Asn	Thr	Ser
			900					905					910		
Lys	Lys	Ala	Gln	Ile	Ile	Gly	Ser	Cys	Tyr	Ala	Phe	Ser	His	Ala	Phe
		915					920					925			
Ile	Tyr	Phe	Ala	Tyr	Ala	Ala	Gly	Phe	Arg	Phe	Gly	Ala	Tyr	Leu	Ile
					935						940				
Gln	Ala	Gly	Arg	Met	Thr	Pro	Glu	Gly	Met	Phe	Ile	Val	Phe	Thr	Ala
945					950					955					960
Ile	Ala	Tyr	Gly	Ala	Met	Ala	Ile	Gly	Lys	Thr	Leu	Val	Leu	Ala	Pro
				965					970					975	
Glu	Tyr	Ser	Lys	Ala	Lys	Ser	Gly	Ala	Ala	His	Leu	Phe	Ala	Leu	Leu
			980					985					990		
Glu	Lys	Lys	Pro	Asn	Ile	Asp	Ser	Arg	Ser	Gln	Glu	Gly	Lys	Lys	Pro
		995					1000					1005			
Asp	Thr	Cys	Glu	Gly	Asn	Leu	Glu	Phe	Arg	Glu	Val	Ser	Phe	Phe	Tyr
					1010			1015			1020				
Pro	Cys	Arg	Pro	Asp	Val	Phe	Ile	Leu	Arg	Gly	Leu	Ser	Leu	Ser	Ile
1025					1030					1035					1040
Glu	Arg	Gly	Lys	Thr	Val	Ala	Phe	Val	Gly	Ser	Ser	Gly	Cys	Gly	Lys
				1045					1050				</		

1140	1145	1150
Gly Ala Gln Leu Ser	Gly Gly Gln Lys Gln Arg	Leu Ala Ile Ala Arg
1155	1160	1165
Ala Leu Leu Gln Lys	Pro Lys Ile Leu Leu Val	Asp Glu Ala Thr Ser
1170	1175	1180
Ala Leu Asp Asn Asp	Ser Glu Lys Val Val	Gln His Ala Leu Asp Lys
1185	1190	1195
Ala Arg Thr Gly Arg	Thr Cys Leu Val Val	His Arg Leu Ser Ala
1205	1210	1215
Ile Gln Asn Ala Asp	Leu Ile Val Val Leu His	Asn Gly Lys Ile Lys
1220	1225	1230
Glu Gln Gly Thr His	Gln Glu Leu Leu Arg	Asn Arg Asp Ile Tyr Phe
1235	1240	1245
Lys Leu Val Asn Ala	Gln Ser Val Gln	
1250	1255	

<210> 6

<211> 3477

<212> DNA

<213> homo sapiens

<400> 6

atggaaaaatt	cagaaaagagc	tgaagaaaatg	caagaaaatt	atcagagaaaa	tggaactgca	60
gaagaaacagc	caaaaactgag	aaaggaagcca	gttgatctcta	ttgagatatt	ccgctttgct	120
gatggactggt	acatcacact	catgactctg	ggatactactg	catcaactggt	caatggagcc	180
tgcccttcctt	taatgccact	ggtttttagga	gaaatgagtg	ataaccttat	tagtggatgt	240
ctagtccaaa	ctaacacatc	aaattatcag	aactgtactc	agtcctcaaga	gaagctgaat	300
gaagatatga	ctcgtgtgcc	ccgtattatg	cttggaatag	gtgtgtctgc	cttgattttt	360
ggttacatcac	agatttccct	gtggattata	actgcagcac	gacagaccaa	gaggatttga	420
aaacagctttt	ttcattcagt	tttggcacag	gacatcggtc	ggtttgatag	ctgtgacatc	480
ggtgaactta	acactcgcat	gacagatgac	attgacaaaa	tcagtgtatg	tattggagat	540
aagattgtctc	tgttgtttta	aaacatgtct	acttttttga	ttggcctcgg	agttggtttg	600
gttaagggtc	ggaaactcac	cctagtgtct	ctatccacgt	ctcctcttat	aatggcttca	660
gcggcagcat	gttctaggat	ggctcatctca	ttgccacgta	aggaattaag	tgccatttcc	720
aaagctgggg	ctgtggcaga	agaagctctg	tcatcaatcc	gaacagtcac	agcctttagg	780
gccacaggaga	aagaacttca	aaggatataca	cagaatctca	aagatgcaaa	ggattttggc	840
ataaaaagga	ctatagcttc	aaaagtgtct	cttgggtctg	tgtacttctt	tatgaattgga	900
acctatggag	tgtgtttttg	gtatggaaacc	tcctgtgattc	ttaatggaga	acctggatat	960
accatcggga	ctgttctctg	tgttttcttt	agtgtaatcc	atagcagtta	ttgcatttga	1020
gcagcagctc	ctcactttga	aaacctcgca	atagcccgag	gagctgcctt	tcatattttc	1080
caggttatgt	ataagaaacc	cagtatagat	aactttttcca	cagctggata	taaacctgaa	1140
tccatagaag	gaactgtgga	atttaaaaat	gtttcttttca	attatccatc	aagaccatct	1200
atcaagattc	tgaagggtct	gaatctcaga	attaagctctg	gagagacagt	cgccctggctc	1260
ggtctcaatg	ccagtggaag	gagtaaggta	gtccagcttc	tgcaagaggt	atatgatccg	1320
gatgatggct	ttatcatgtg	ggatgagaat	gacatcagag	ctttaaatgt	gcggcattat	1380
cgagaccata	ttggagtggt	tagtcaagag	cctgttttgt	tcgggaccac	catcagtaac	1440
aatatcaagt	attgacraga	tgatgtgact	gatgaagaga	tgagagagac	agcaagggaa	1500
gcaaatcgct	gatgttttat	catggagttt	cctaataaat	ttaatacatc	ggtaggggaa	1560
aaaggagctc	aaatgagtgg	agggcagaaa	cagaggatcg	caattgctcg	tgccattgatt	1620
cgaaaacccca	agattctgat	tttagatgag	gctacgtctg	ccctggattc	agaaagcrag	1680
tcagctgttc	aaagctgcact	ggagaaggcg	agcaaaagtc	ggagatcaat	cgttggtagca	1740
caccagcttt	ctactatttg	aagtcagat	ttgattgtga	ccctaaagag	tggaaatgctg	1800
gcgggaagaag	gagcacatgc	tgaactaatg	gcaaaacagag	gtctatatata	ttcacttgtg	1860
atgtcacagg	atatttaaaa	agctgatgaa	cagatggagt	caatgacata	ttctactgaa	1920
agaaagacca	actcaactcc	cttgcaactc	gtgaagagca	tcaagtacga	cttcattgac	1980
aaggctgagg	aatecaccca	atctaaagag	ataagctctc	ctgaagctctc	tctattaaaa	2040

```

attttaaagt taaacaagcc tgaatggcct tttgtggttc tggggacatt ggcttctgtt 2100
ctaaataggaa ctgttcattcc agtatatttcc atcatctttg caaaaattat aaccatgttt 2160
ggaaaataatg ataaaaaccac attaaagcat gatgcagaaa tttattccat gatattcgtc 2220
attttgggtg tttttgtctt tgtcagttat ttcatgcagg gattatttta cggcagagca 2280
ggggaaattt taccgatgag attaagacac ttggccttca aagccatgtt atatcaggat 2340
attgcctcgtt ttgatgaaaa ggaacacagc acaggaggct tgacaacaat attagccata 2400
gatatagcac aaattccaag agcaacaggt tccaggattg gcgtcttaac acaaaatgca 2460
actaacatgg gactttcagt tatcatttcc tttatatatg gatgggagat gacattcctg 2520
attctgagta ttgctccagt acttgccgtg acaggaatga ttgaaaccgc agcaatgact 2580
ggatttgcca acaaaagataa gcaagaactt aagcatgctg gaaagatagc aactgaaagt 2640
ttggagataa tacgtactat agtgtcatta acaagggaag aagcctctga gcaaatgtat 2700
gaagagatgc ttcagactca acacagaaaat acctcgaaag aagcacagat tattggaagc 2760
tgttatgcct tcagccatgc ctttatatat ttgtcctatg cagcagggtt tgcatttgga 2820
gcctattttat tccaagctgg acgaatgacc ccagagggca tgttcatagt ttttactgca 2880
attgcatatg gagctatggc catcggaata acgctcgttt tggctcctga atattccaaa 2940
gccaaatcgg gggctgcgca tctgtttgcc ttgttggaag aaaaacccaa tatagacgc 3000
cgcatgcaag aagggaataa gccagacaca tgtgaaggga atttagagt tgcgaagtc 3060
tctttctctc atccatgtcg ccagatgtt ttcctctcc gtggcttatt cctcagttat 3120
gagcgaggaa agacagtagc atttgtgggg agcagcggct gtgggaaaag cacttctgtt 3180
caactctcgc agagacttta tgaccccgtg caaggcaag tgcgtgttga tgggtgggat 3240
gcaaaagaat tgaatgtaca ttggctcgtg tcccaaatag caatcgttcc tcaagagcct 3300
gtgctcttca actcgagcat tgctgagaac atcgctatg gtgacaacag ccgtgtggtg 3360
ccattagatg agatcaaaag agccgcaaat gcagcaata tccattcttt tattgaagg 3420
ctccctgagt ggttcagcat gcccttgata aagccaggac gggaaggaca tgcctag 3477

```

```

<210> 7
<211> 1158
<212> PRT
<213> homo sapiens

<220>
<221> VARIANT
<222> (1)... (1158)
<223> Xaa = Any Amino Acid

```

```

<400> 7
Met Glu Asn Ser Glu Arg Ala Glu Met Gln Glu Asn Tyr Gln Arg
1 5 10 15
Asn Gly Thr Ala Glu Glu Gln Pro Lys Leu Arg Lys Glu Ala Val Gly
20 25 30
Ser Ile Glu Ile Phe Arg Phe Ala Asp Gly Leu Asp Ile Thr Leu Met
35 40 45
Ile Leu Gly Ile Leu Ala Ser Leu Val Asn Gly Ala Cys Leu Pro Leu
50 55 60
Met Pro Leu Val Leu Gly Glu Met Ser Asp Asn Leu Ile Ser Gly Cys
65 70 75 80
Leu Val Gln Thr Asn Thr Ser Asn Tyr Gln Asn Cys Thr Gln Ser Gln
85 90 95
Glu Lys Leu Asn Glu Asp Met Thr Leu Leu Pro Leu Tyr Tyr Val Gly
100 105 110
Ile Gly Val Ala Ala Leu Ile Phe Gly Tyr Ile Gln Ile Ser Leu Trp
115 120 125
Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys Gln Phe Phe
130 135 140
His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser Cys Asp Ile
145 150 155 160

```


Gly Glu Leu Asn Thr Arg Met Thr Asp Asp Ile Asp Lys Ile Ser Asp
 165 170 175
 Gly Ile Gly Asp Lys Ile Ala Leu Leu Phe Gln Asn Met Ser Thr Phe
 180 185 190
 Ser Ile Gly Leu Ala Val Gly Leu Val Lys Gly Trp Lys Leu Thr Leu
 195 200 205
 Val Thr Leu Ser Thr Ser Pro Leu Ile Met Ala Ser Ala Ala Ala Cys
 210 215 220
 Ser Arg Met Val Ile Ser Leu Pro Ser Lys Glu Leu Ser Ala Tyr Ser
 225 230 235 240
 Lys Ala Gly Ala Val Ala Glu Glu Val Leu Ser Ser Ile Arg Thr Val
 245 250 255
 Ile Ala Phe Arg Ala Gln Glu Lys Glu Leu Gln Arg Tyr Thr Gln Asn
 260 265 270
 Leu Lys Asp Ala Lys Asp Phe Gly Ile Lys Arg Thr Ile Ala Ser Lys
 275 280 285
 Val Ser Leu Gly Ala Val Tyr Phe Phe Met Asn Gly Thr Tyr Gly Leu
 290 295 300
 Ala Phe Trp Tyr Gly Thr Ser Leu Ile Leu Asn Gly Glu Pro Gly Tyr
 305 310 315 320
 Thr Ile Gly Thr Val Leu Ala Val Phe Phe Ser Val Ile His Ser Ser
 325 330 335
 Tyr Cys Ile Gly Ala Ala Val Pro His Phe Glu Thr Phe Ala Ile Ala
 340 345 350
 Arg Gly Ala Ala Phe His Ile Phe Gln Val Ile Asp Lys Lys Pro Ser
 355 360 365
 Ile Asp Asn Phe Ser Thr Ala Gly Tyr Lys Pro Glu Ser Ile Glu Gly
 370 375 380
 Thr Val Glu Phe Lys Asn Val Ser Phe Asn Tyr Pro Ser Arg Pro Ser
 385 390 395 400
 Ile Lys Ile Leu Lys Gly Leu Asn Leu Arg Ile Lys Ser Gly Glu Thr
 405 410 415
 Val Ala Leu Val Gly Leu Asn Ala Ser Gly Lys Ser Thr Val Val Gln
 420 425 430
 Leu Leu Gln Arg Leu Tyr Asp Pro Asp Asp Gly Phe Ile Met Val Asp
 435 440 445
 Glu Asn Asp Ile Arg Ala Leu Asn Val Arg His Tyr Arg Asp His Ile
 450 455 460
 Gly Val Val Ser Gln Glu Pro Val Leu Phe Gly Thr Thr Ile Ser Asn
 465 470 475 480
 Asn Ile Lys Tyr Gly Xaa Asp Asp Val Thr Asp Glu Glu Met Glu Arg
 485 490 495
 Ala Ala Arg Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu Phe Pro Asn
 500 505 510
 Lys Phe Asn Thr Leu Val Gly Glu Lys Gly Ala Gln Met Ser Gly Gly
 515 520 525
 Gln Lys Gln Arg Ile Ala Ile Ala Arg Ala Leu Val Arg Asn Pro Lys
 530 535 540
 Ile Leu Ile Leu Asp Glu Ala Thr Ser Ala Leu Asp Ser Glu Ser Lys
 545 550 555 560
 Ser Ala Val Gln Ala Ala Leu Glu Lys Ala Ser Lys Gly Arg Thr Thr
 565 570 575
 Ile Val Val Ala His Arg Leu Ser Thr Ile Arg Ser Ala Asp Leu Ile
 580 585 590
 Val Thr Leu Lys Asp Gly Met Leu Ala Glu Lys Gly Ala His Ala Glu
 595 600 605

Ser Thr Ser Val Gln Leu Leu Gln Arg Leu Tyr Asp Pro Val Gln Gly
 1060 1065 1070
 Gln Val Leu Phe Asp Gly Val Asp Ala Lys Glu Leu Asn Val Gln Trp
 1075 1080 1085
 Leu Arg Ser Gln Ile Ala Ile Val Pro Gln Glu Pro Val Leu Phe Asn
 1090 1095 1100
 Cys Ser Ile Ala Glu Asn Ile Ala Tyr Gly Asp Asn Ser Arg Val Val
 1105 1110 1115 1120
 Pro Leu Asp Glu Ile Lys Glu Ala Ala Asn Ala Ala Asn Ile His Ser
 1125 1130 1135
 Phe Ile Glu Gly Leu Pro Glu Trp Phe Ser Met Pro Leu Ile Lys Pro
 1140 1145 1150
 Gly Arg Glu Gly His Ala
 1155

<210> 8

<211> 3939

<212> DNA

<213> homo sapiens

<400> 8

ttcaactgac	tggatggggc	ccactcaaaa	cagcatctaa	ggaattaaaa	agaagtaaat	60
tgtaataaag	atggaaaatt	cagaaagagc	tgaagaaatg	caagaaaatt	atcagagaaa	120
tggaactgca	gaagaacagc	caaaactgag	aaagggaagca	gttgatctta	ttgatatt	180
cgcctttgct	gatggactgg	acatcacact	catgatccctg	ggatatactgg	catcactgg	240
caatggagcc	tgccttccct	taatgccact	ggtttttagga	gaaatgagtg	ataaccttat	300
tagtggatgt	ctagtccaaa	ctaacacatc	aaattatcag	aactgtactc	agtcctcaaga	360
gaagctgaat	gaagatatag	ctctgttgcc	octgtattat	gttggaatag	gtgttgcctgc	420
cttgattttt	ggttacatac	agatttccct	gtggattata	actgcagcac	gacagaccaa	480
gaggattcga	aaacagcttt	ttcattcagt	tttggcacag	gacatcgggt	ggctttgatag	540
ctgtgacatc	ggtgaacctt	acactcgcac	gacagatgac	attgacaaaa	tcagtgtatgg	600
tattggagat	aagattgctc	tgttgtttca	aaacatgtct	acttttttca	ttggcctggc	660
agttgggttt	gttaagggct	ggaaactcac	cctagtgaat	ctatccacgt	ctcctttat	720
aatggctttc	gcggcagcat	gttctaggat	ggctcatctca	ttgccacgta	aggaattaa	780
tgccatttcc	aaagctgggg	ctgtggcaga	agaagtcctg	tcacatcaat	ccgaacgtcat	840
agccttttagg	gccacaggaga	aagaacttca	aaggttatca	cagaatctca	aagatgcaaa	900
ggattttggc	ataaaaagga	ctatagcttc	aaaagtgtct	cttgggtgctg	tgtacttctt	960
tatgaattgga	acctatggac	ttgctttttg	gtatggaacc	tccttgatcc	ttaatggaga	1020
acctggatatt	accatcgga	ctgtctttgc	tgttttcttt	agtgtaatcc	atagcagtta	1080
ttgcatttga	cagcagctcc	ctcaacttga	aaacctcgca	atagcccgag	gaggtgcctt	1140
tcataatttcc	cagggttattg	ataaagaacc	cagtatagat	aacttttcca	cagctggata	1200
taaaccttga	tcacatagaag	gaactctgga	atttataaat	gtttctttca	attatccatc	1260
aagaccatct	atcaagattc	tgaagggtct	gaatctcaga	attaagtctg	gagagacagt	1320
cgccttggct	ggctctcaat	ccagtggaag	gagtagcgga	gtccagcttc	tgcaagaggt	1380
atagtatccg	gatgatggct	ttatcatggg	ggatgagaat	gacatcagag	ctttaaattg	1440
cgcgcatatt	cgagaccata	ttggagtggt	tagtcaagag	cctgttttgg	tcgggaccac	1500
catcagtaac	aatatcaagt	atggacraga	tgatgtgaat	gatgaagaga	tgagagagag	1560
agcaaggaaa	gcaaatgcgt	atgattttat	catggagttt	cctaataaat	ttaatacatt	1620
ggtagtggaa	aaaggagctc	aaatgagtg	agggcagaaa	cagaggtatg	caattgtctg	1680
tgcccttagtt	cgaaacccca	agattctgat	tttagatgag	ctacgtctcg	ccctggattc	1740
agaaagcorag	tcagctgttc	aagctgcaat	ggagaaggcg	agcaaaagtc	ggactacaat	1800
cggtggatgac	cacgcagctt	ctactattcg	aagtgacagat	ttgattgtga	ccctaagaga	1860
tggaatcgtg	gcggagaaag	gagcacatgc	tgaactaatg	gcaaaacagag	gtctatata	1920
ttcactctgtg	atgtcacagg	atattaaaaa	agctgatgaa	cagatggagt	caatgacata	1980
ttctactgaa	agaaaagcca	actcacttcc	ctctgcactct	gtgaagagca	tcagtgcaga	2040
cttcattgac	aagcctgagg	aatccaccca	atctaaagag	ataagctctc	ctgaagctcc	2100

tctattaaaa	attttaaagt	taaacaaagcc	tgaatggcct	tttgtgggttc	tggggacatt	2160
ggcttctgtt	ctaaatggaa	ctgttcatcc	agtattttcc	atcatctttg	caaaaaattat	2220
aaccatgttt	ggaaaataatg	ataaaaccac	attaaagcat	gatgcagaaa	tttattccat	2280
gatattcgtc	attttgggtg	ttatttgctt	tgtcagttat	ttcatgcagg	gattatttta	2340
cggcagagca	ggggaaat	taccgatgag	attaagacac	ttggccttca	aagccatgtt	2400
atatcaggat	attgcttgggt	ttgatgaaaa	ggaaaacagc	acaggaggct	tgacaacaat	2460
attagccata	gatatagcac	aaattcaagg	agcaacagggt	tccaggattg	gcgtcttaac	2520
acaaaaatgca	actaacatgg	gactttcagt	tatcatttcc	tttatatatg	gatggggagat	2580
gacattcctg	atcttgagta	ttgctccagt	acttgccgtg	acaggaatga	tgtaaaaccgc	2640
agcaatgact	ggatttgcca	acaaaagataa	gcaagaactt	aagcatgctg	gaaagatagc	2700
aactgaagct	ttggagaaata	tacgtactat	agtgtcatta	acaagggaaa	aagccttcga	2760
gcaaatgtat	gaagagatgc	ttcagactca	acacagaaat	acctcgaaga	aagcacagat	2820
tattggaagc	tgttatgcat	tcagccatgc	ctttatatat	tttgccatag	cagcagggtt	2880
tcgatttggga	gcctattttaa	ttcaagctgg	acgaatgacc	ccagagggca	tgttcatagt	2940
ttttactgca	attgcatatg	gagctatggc	catcggaata	acgctcgttt	tggctcctga	3000
atattccaaa	gccaaatcgg	gggctgcgca	tctgtttgcc	ttgttggaaa	agaaaccaa	3060
tatagacagc	cgcagtcaag	aagggaataa	gccagacaca	tgtgaaggga	atttagagtt	3120
tcgagaagtc	tctttcttct	atccatgtcg	cccagatggt	ttcatcctcc	gtggcttacc	3180
cctcagatatt	gagcagaggaa	agacagtagc	atttgtgggg	agcagcggct	gtgggaaaag	3240
cacttctgtt	caacttctgc	agagaacttta	tgaccccggt	caaggacaag	tgtctgttga	3300
tgggtgtgat	gcaaaagaat	tgaatgtaca	gtggctccgt	tcccaaatag	caatcgttcc	3360
tcaagagcct	gtgctcttca	actgcagcat	tgtcgagaac	atcgccatag	gtgacacag	3420
ccgtgtgtgtg	ccattagatg	agatcaaaga	agccgcaaat	gcagcaata	tccattcttt	3480
tattgaagggt	ctccctgaga	aatacaaac	acaagttgga	ctgaaaggag	cacagctttc	3540
tggcggccag	aaacaaagac	tagctattgc	aagggtctt	ctccaaaaac	ccaaaatttt	3600
attgktggat	gaggccactt	cagccctcga	taatgacagt	gagaagggtg	ttcagcatgc	3660
ccttgataaaa	gccaggacgg	gaaggacatg	cctagtgtgc	actcacaggc	tctctgcaat	3720
tcagaaacgca	gatttgatag	tggttctgca	caatggaaaag	ataaaggaaac	aaggaaactca	3780
tcaagagctc	ctgagaatc	gagacatata	ttttaagtta	gtgaatgcac	agtcagtgca	3840
gtgatgctgt	tgaggtagca	catattttga	tgttcgtgta	atgcaaaaga	ggagtagtta	3900
ataattactt	gccaagcttt	gaaaaaaaaa	aaaaaaaaaa			3939